THE

HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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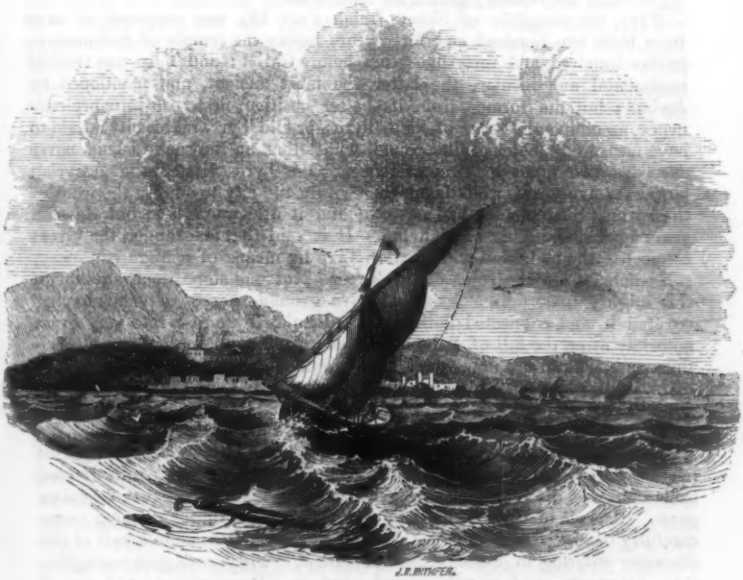
SEA-COASTS AND SHORES OF CILICIA, &c.—No. VI.



SOUR, THE ANCIENT TYRE.

A FAIR, bold coast, a gently rippling sea, and our small boat, like a sea-gull, skims the water's surface. What a fine-looking city is yonder! High up on the embankments, partly obscured by rich foliage, partly standing forth boldly in the sunshine, its loftier houses and tall minarets dazzling in the light, like streaks of silver drawn upon the clear blue sky! Stranger, yonder city is the shadow of the past—a mirage on the oasis of time, the ghost of bygone splendour. There are rocks in the ocean, not far from

the shore—bare, naked, bleak-looking rocks—the small boat of the fisher plies actively from one to the other, spreading the torn nets to mend and dry; what rocks can these be? The breeze freshens before the query is answered; and, sailing in beside the mainland and the rocks, the anchor is cast, and we have arrived at Tyre. "I will scrape her dust from her, and make her like the top of a rock: it shall be a place for the spreading of nets in the midst of the sea; for I have spoken it, saith the Lord God:" and now the stranger is answered, the God of truth hath spoken, and the God of power hath fulfilled the words. We gaze upon the dreary waste of rocks in vain endeavours to recognise even ever so small a stone or fragment of the city of the tribe of Asher. It would require a powerful imagination indeed to conjure up a hut, much less a city, on the sharp-pointed, cleanly-laved rocks before us; and so we turn despairingly to the mainland: but here, from the low deck of our small boat, nought is perceptible, save the sea-sand and the deep-rutted embankments, profusely overhung with thyme and wild myrtle; and yet we are exactly half-way between, and within a stone's throw of each—of Tyre Proper and Insular Tyre—and are vacantly gazing on their sites.

Tyre, the daughter of Sidon (Isaiah xxiii. 12), was supposed to have been built two hundred and forty years before the temple of Solomon, or twelve hundred and forty-five years before Christ; and Tyre was twofold continental and insular, the latter the most ancient, and mentioned by Joshua; but the former, from its better position, first rose into pre-eminence, assuming the name of Palæ-Tyrus, or Old Tyre. This city is said to have measured nineteen miles round, whilst that on the rocky island never exceeded two miles in circumference. Old Tyre resisted the Assyrian power for five years, wells being dug within the city to supply the want of the springs Shalmaneser had cut off; and it afterwards held out thirteen years against the King of Babylon. It is said that Alexander the Great connected the mainland with insular Tyre by means of a huge causeway, constructed from the ruins of old Tyre. Not one stone upon another of this mighty undertaking remains above ground, heaps of sand having covered it, and connected both cities. Insular Tyre rose into very great notoriety after the fall of Palæ-Tyrus, and attained to opulence as a maritime state. Both are now swept from the face of the earth; of old Tyre or of insular Tyre not a vestige is to be seen. "Thou shalt be built no more," says Ezekiel (xxvi. 21); "though thou be sought for, yet shalt thou never be found again." A fearful doom, fulfilled to the letter! We landed upon the deserted beach, on which, as on the rocks, long ranges of nets were exposed to the sun; whilst every here and there a meanly-clad fisherman was disentangling the seaweeds, or fresh cording the broken parts. Baskets of fine red mullets, the spoil of last night's fishing, were carefully deposited in deep holes dug out in the sand, so as to admit of the sea-water entering to preserve their sweetness. They were poor enough—these fishermen—and meanly enough clad, in all conscience: and yet, if possessed of the smallest sense of enterprise, these very fish (whole basket loads of which are daily wasted and thrown on the beach) would yield them a comfortable revenue, if carried to Beyrout, a distance that might easily be sailed in a few hours, under the shelter of the land, and with the regular land breezes. Before leaving the beach, we turn again to look for some fragment of insular Tyre: the sharp-pointed rocks, foam-besmeared by the rippling of the waves, meet our gaze, and beyond this the fathomless ocean; and of those very rocks it was said, "Tyre did build herself a

stronghold, and heaped up silver as the dust, and fine gold as the mire of the streets. Behold the Lord will cast her out, and he will smite her power in the sea, and she shall be devoured with fire."—(Zech. ix. 3, 4.) And this prophecy was fulfilled when Alexander stormed and set fire to the city. With such mournful reflections we sauntered up from the beach, and passing a few dilapidated arches, ruins of the once famous aqueduct, entered upon the mulberry plantations, which now yield a moderate annual revenue to the modern town. The day was hot, and the refraction from the sandy soil occasioned an intolerable glare; but goldfinches and linnets were carolling sweetly from the branches of the fig and the olive trees, doubtless busy building themselves their own small cities, which, like Tyre of old, were destined to be scattered and swept away by the winter of time.

After wandering for some time amongst pleasant little lanes, we eventually emerged from the gardens, and came upon a very busy scene of labour, one which might faintly recall to mind the bustle of that vast and populous Tyre, which stood forth alone in the world, unsurpassed, unrivalled in commercial enterprise. The monsoon, or silk season, had now commenced, and all the occupants of the village were actively employed reeling off the cocoons into silk. On the outskirts of the village several temporary ovens had been erected, and close beside these ovens stood the great and clumsy wheels, also temporarily set up for the occasion. The construction of these ovens was extremely simple, and somewhat in the shape of the pictures we see of the altars built for sacrifice. These ovens, on the flat surface of the top, had hard-baked earthenware basins, as large as an ordinary washhand-basin. The lower part served as a furnace, the fire of which was kept alive by the incessant supply of firewood. Apparently the reeling gave occupation for the whole household: the wife turned the wheel by means of a handle, similar to those used on barrel organs; the husband, seated on a high stool, plied the wheels with threads gathered from the cocoons, which were parboiled in water heated in the basin; one of the daughters fetched cold water to mix with the water heated in the basin, so as to keep it down to a certain temperature; another, with a large basketful of cocoons, supplied the place of such as were reeled off, or were any ways imperfect; or with a bunch of dried twigs whipped those in the basin into a frothy texture, which exposed or unwound the cocoon, and enabled the reeler to seize upon some protruding thread, that he skilfully knotted to those already in process of being reeled; the eldest son helped to feed the fire; the youngest carefully gathered up the shells of those already wound off, and spread them on a mat in the sun to dry; in short, all were busy, and not one particle or shred of the valuable worm's nest was thrown aside as useless. A dozen such families were congregated in a cleanly-swept, open space, opposite the town, and they were all as merry as the birds; singing snatches of ditties; hailing one another with hilarity; pausing a few seconds for rest, or a draught of water, and then at it again with all the zeal and fervour imaginable—the freshly-reeled silk each minute increasing in bulk, and glistening with the polish of a newly-coined sovereign. The modern town of Sour, or Tyre, when closely inspected, presents a very rough and most ordinary appearance, even the minarets of the mosque being simply plastered over, like the rest of the houses, with common lime, which, however, is susceptible of a high polish; hence the glare of the sun's refraction, falling on these lofty pillars, produced a very beautiful effect when viewed by us from some distance out at sea: the

reality, however, was very common-place, the buildings and the houses at Sour being much of the same class as those inferior villages in the plains of Antioch. That Sour occupies a portion of the site of ancient Tyre we have no hesitation in asserting, considering the relative positions of the rocks and the mainland, and the vast extent of ground that Palœ-Tyre was spread over. But this is all the claim that Sour has to our attention: in its modern construction there is not one fragment of the ancient city, nor yet hardly a stone from the ground that covers its site, the houses being built of sunburnt bricks, manufactured on the margin of a swamp, two hours distant from Sour. Tyre has fled for ever, never again to be found.—"Yet shalt thou never be found again." Sour is a thriving village of about five thousand and a few hundred inhabitants. In common with all the sea-coast of Palestine and Syria, Sour has derived immense advantages from the free introduction of corn into England. No European vessels have as yet loaded there, but numbers of native craft find occupation in carrying the produce to Beyrout, or Caipha, in either of which ports there are seldom less than from ten to a dozen European vessels in the berth for England or Ireland, loading wheat. We have no doubt but that in the course of a few years Sour will afford inducements for European vessels to cast anchor in the comparatively neglected roadstead of Tyre. We were witness to a scene at Tyre, such as one might easily imagine to be a true and faithful picture of a little incident occurring in the life of St. Paul, and which is related as having taken place in this very selfsame Tyre. After having partaken of the hospitalities of Signor Attalla, the British consular agent, as we intended to sleep on shore that night, so soon as the heat permitted, we went forth in search of food for the mind, and in this aim were amply satisfied; passing by where the silk-reelers had been occupied all day, we observed an unusual commotion amongst the villagers, all of whom had finished work for the day, and were now congregating round one of the houses, from which the voice of wailing proceeding led us to imagine that some member of the family had died, or was in the act of expiring. Recognising amongst the group our Arab captain, we beckoned him to our aid, and he soon enlightened us as to the real cause of sorrow. A young man, who had bound himself by a vow, was now about to discharge that vow by proceeding on a pilgrimage to Jerusalem. Though the distance was small, his parents would be inconsolable during his absence. Presently the young man emerged from his cottage, followed by the tottering steps of his very, very old-looking father, attended by half the Christians in the place. We followed them down to the sea-side, and arriving there, found a boat on the point of sailing for Joppa. The young man embraced his connexions and friends all round, and then, throwing himself on his knees on the sand, seemed for a few minutes lost in deep devotion. All the male part of the audience were audibly praying with him, while the females could hardly stifle their emotions. A few minutes, and the prayer was ended. The young man sprang gaily to his feet, and jumped into the boat, which immediately hoisted her little sails, and quickly disappeared behind a ledge of rocks. The male spectators shouted after him a blessing; the females raised a loud wail of sorrow, and threw handsful of sea-sand over their heads: the boat disappeared, and the multitude dispersed. The youth was the only son of the Kekia, or Christian chief, and had much endeared himself to the villagers. But this was no extraordinary case. If any of the villagers quitted their native village, though only for a week, on departing and on arriving the whole village

went forth to accompany them from or back to their homes. After we had witnessed this spectacle we sat down on a pleasant shady part of the beach, and pulling out our little pocket Testament, read:—"Now when we had discovered Cyprus we left it on the left hand, and sailed into Syria, and landed at Tyre; for there the ship was to unlade her burden. . . . And when we had accomplished those days we departed and went our way, and they all brought us on our way with wives and children, till we were out of the city: and we kneeled down on the shore and prayed. And when we had taken our leave one of another we took ship; and they returned home again." (Acts xxi. 3—6.) This was in the year of our Lord 60; what we witnessed was in September 1850. Seventeen hundred and ninety years had intervened, and yet it was difficult to draw a hair of distinction between what happened in the days of St. Paul, and what we had witnessed with our own eyes.

BELL ROCK LIGHTHOUSE.—No. II.

During the winter months, and while the operations could not be carried on at the Bell Rock, the whole of the workmen were employed in the work-yard, where the stones were all prepared, and laid course by course upon a stone platform or basement, equal to the foundation course of the light-house. These stones were fitted into their places and carefully numbered, and marked as they were to lie in the building; an operation which was indispensably necessary, the several courses being dovetailed and connected together so as to form one mass, from the centre to the circumference of the building. The stones were also bored, or fixed with trenails of oak wood and joggles of stone, similar to those in the Eddystone Lighthouse, and in this prepared state were laid aside and in readiness for being shipped in lighters for the Bell Rock.

The operation of the second season commenced at the rock as early as the weather would permit. The work consisted chiefly in laying tracks of cast-iron railways from the several landing-places to the site of the light-house for the conveyance of materials to the building. These preparations, together with the fixing of cranes and other apparatus, having been got in readiness, and the foundation pit of the lighthouse, &c., excavated in some places to the depth of five feet in the rock, the first stone was laid upon Sunday, the 10th of July 1808. In the course of this current season four courses were laid; the first consisting of detached stones for bringing the foundation to a uniform level, besides three entire courses, which brought the building to the height of five feet six inches above the lowest part of the foundation. The works went forward with much facility, for the barrack having withstood the storms of the former winter, gave such confidence to the landing operations at the rock, that there was no hesitation on the part of the workmen as to the practicability of landing at any time, if the boats could be got out of the tender in safety; but the vessels often rolled so heavily, that in hoisting them out great risk was run of their being staved or damaged. A new vessel, called the Sir Joseph Banks, was also provided as a tender for lodging the workmen off the rock, instead of in the Pharos. This vessel had the great advantage of being easily cast loose from the moorings when necessary, and brought to the lee-side of the rock, which, as the Pharos was a guide to shipping, could not be done with that vessel.

The works of 1809, or the third season, were begun in the spring of that year, by laying down mooring chains with floating buoys for mooring the boats employed in landing the stones upon the rock. After considerable labour the lighthouse was got to the height of thirty feet early in September; and this being the solid part of the building, Mr. Stevenson left it with more confidence to the influence of the coming winter, than if any portion of the hollow work had been commenced. From its similarity in position to the Eddystone, Mr. Stevenson found great help in his proposed edifice from the experience of the late Mr. Smeaton, and his account of the erection of the Eddystone Lighthouse became a kind of text-book of which he gladly availed himself. He adopted the same mortar as that employed by this eminent man, having on a visit to the Eddystone, forty-two years after its erection, found that the original pointings of the joints had never required repair.

A cargo of limestone was consequently brought from Aberthaw, in Wales, where it is found in great abundance on the sea-shore: the softer parts of the high cliffs being undermined by the sea, the upper parts fall in great quantities, and when a vessel is to load limestone, it is grounded on the beach, and loaded as the tide recedes, which, carrying away with it all the earthy matter, leaves the limestone in round lumps on the beach.

Pozzolano, the second ingredient in the mortar, is a kind of earthy lava, very abundant on the coast of Italy and shores of Sicily; it was generally brought to this country as ballast, but during the progress of the Bell Rock Lighthouse, from the long-continued and almost universal restrictions upon British trade with the Continent, Mr. Stevenson could only procure it with great risk and expense; and the Dutch ports being open at the time, he substituted a similar kind of earth, called "Trass," which had been successfully employed by the Dutch in building their dikes. He was also compelled, like Mr. Smeaton, to have recourse to a protection medal to preserve his men from the impress service. Great anxiety was felt at an early period of the next season to get the masonry of the lighthouse completed, and the light-room fitted up in good weather. On the landing on March the 11th, the winter was found to have left its traces, for it appeared from certain marks on the barracks, at the height of about five feet from the rock, that two large drift-stones, weighing each half a ton, had actually been lifted by the sea and dashed against the building. The lighthouse, as far as the daily reach of the tide, was now covered with a strong growth of sea-weed, which growing in extensive beds upon the Bell Rock, greatly lessen the force of the waves which roll over it. "It often happens," says Mr. Stevenson, "when heavy seas were rolling, and at a distance threatening to overrun the whole, that, upon reaching these beds of fuci, with which the flat and level parts of the rock were thickly coated, the velocity and force of the waves were immediately checked, and in a great measure destroyed."

Before the construction of the lighthouse, the Bell Rock was much frequented by herds of seals, who chose it for a resting-place during low water. As many as fifty or sixty of these harmless creatures had been seen at one time on the rock, and during the erection of the building they would sometimes approach the detached parts of the rock, as if watching the workmen, thus busy on this their late exclusive territory.

The first employment of the men was to scrape off the growth of sea-weed which had rendered walking on the top of their work somewhat difficult; but they were indebted to this covering of nature for enabling the

engineer to regulate the proper position of the entrance door, as the growth of the sea-weed indicated the directions taken by the heaviest seas. The workmen took possession very gladly of this barrack, all being thankful to get rid, not only of the trouble of boating to and fro, but of the sickly motion of the tender. The barrack was connected with the rock by a bridge of timber, and Mr. Stevenson gives an interesting account of the cabin in the barrack, in which he passed many weeks, "not in the gratification of all he wished, but in finding what he could do without." This little cell measured not more than four feet three inches in breadth on the floor, and although, from the oblique direction of the beams, it widened towards the top, yet it did not permit him to fully extend his arms, while its length was but just sufficient for the suspension of his cot during the night, which, during the day, was tied up to the roof. His folding table was attached with hinges immediately under the small window of his apartment, and his books and apparatus, with two to three camp stools, formed the only furniture. Yet, this little cabin looked neat and comfortable, the walls being covered with green cloth, formed into pannels with red tape. Here when the works were nearly completed, he had the pleasure of receiving a visit from Mrs. Dickson, the daughter of Mr. Smeaton, who took great interest in the lighthouse, tending as it did to revive the memory of her beloved parent. The masonry of the solid part had been the employment of three years, but the work now went on with more expedition, and by the month of October it had reached its full height of one hundred feet. In December the light was advertised to the public for exhibition on the 1st of February 1811.

The lighthouse is a circular building, measuring forty-two feet in diameter at the base, and thirteen at the top; including the light-room, it is one hundred and fifteen feet high. The ascent from the rock to the top of the solid, or lowest thirty feet, is by means of a kind of trap ladder, which is more easily ascended by the light-keepers than by strangers, who are generally hoisted up to the entrance door in a chair by a moveable crane of a singular construction, projecting from the building. The ascent from the level of the entrance door to the first apartment, containing the water, fuel, &c., is by means of a circular stair; the other apartments are reached by wooden steps. The three lower apartments have two windows each, the upper ones four. All have double sash-frames glazed with plate-glass, besides a storm-shutter of timber for the defence of the glass against the sprays of the sea; for although the light-room is eighty-eight feet above the medium level of the tide, and is defended by a projecting cornice or balcony, with a cast-iron rail formed like the meshes in network, yet the sprays of the sea occasionally lash or fall upon the glass of the light-room, so that it becomes necessary, in gales of wind, to shut the whole of the dead lights to windward. The light-room is of an octagonal figure, measuring twelve feet across and fifteen feet in height. It is framed of cast-iron, and glazed with polished plate-glass, each plate measuring two feet six inches by two feet three inches, and is about one-fourth of an inch in thickness. It was framed and prepared at Edinburgh, is covered with a domed roof, and terminates with a circular ball. It is also furnished with a lightning-conductor.

The light of the Bell Rock is from oil, with argand burners, placed in the focus of silver-plated reflectors, measuring twenty-four inches each over the lips, and is so powerful as to be seen and readily distinguished when the atmosphere is clear at the distance of six to seven leagues, differing

from all others on the coast by showing a red and white light alternately, with a dark interval between each. This is effected by means of a train of machinery, which is also employed in causing two large bells to toll night and day during the prevalence of foggy weather. As these bells weigh upwards of twelve cwt. each, they are heard at such a distance as to afford full warning to the mariner when the light and lighthouse may be wholly obscured.

At Arbroath, eleven miles from the rock, buildings are erected for the accommodation of the families of the light-keepers, each having an enclosed piece of garden-ground. Here, connected with them, is a signal-tower fifty feet high, the top of which is formed with an observatory-room, and serves to carry on and arrange signals with the lighthouse. Including these buildings, the attending vessel, and the first year's stores, the Bell Rock Lighthouse is said to have cost about 60,331*l*. A very large sum to be devoted even to so praiseworthy a purpose, when we consider the long and expensive war in which the country was then engaged; and, certainly, it may be considered not only as one of the most important undertakings of the reign in which it was erected, but one which has gained for its architect the honour he so well merited. The complete success of this skilful undertaking was well tested in the storm of 1823, the second one which had occurred since the lighthouse had been built. The Pharos, in the course of her attendance to the rock, was driven first into the Frith of Tay and afterwards into the Forth, where she was compelled to anchor about seventy miles from her station; and in the course of the winter, it was fully two months before she could effect a landing at the Bell Rock. The only accident, however, which happened at the lighthouse was the breaking of the ratchet-wheel spring, which keeps the reflector-frame in motion while the machinery is winding up. Though only of a trivial nature, and unconnected with the stormy effects of the sea, it nevertheless created considerable alarm among the families of the light-keepers ashore, as the signal-ball was very properly kept down on the occasion. Their anxiety, however, was relieved in the course of the day, by the arrival of a carrier pigeon, with a billet from the principal light-keeper, intimating what had happened. A pair of these curious birds were originally presented to the establishment by Captain S. Brown. They have now multiplied considerably, and two or more are generally conveyed to the rock at every trip of the tender, and let off occasionally for amusement; and their flight between the lighthouse and the signal-tower of Arbroath (upwards of eleven miles) has been ascertained to have been at the rate of a mile a minute.—M. J.

A VISIT TO AUSTRALIA AND ITS GOLD REGIONS.—No. XIII.

THE GOLD REGIONS—THEIR DISCOVERY AND RICHNESS—STATE OF SOCIETY PRODUCED—THE "YIELD" FROM THE MINES—PROBABLE POLITICAL AND SOCIAL EFFECTS OF THE DISCOVERY.

We have from time to time, in those articles which relate to the separate colonies, mentioned the general mineralogical features of each, but the subject of gold—"yellow, precious, glittering gold"—we mentioned as being reserved for special consideration.

The discovery of the prolific richness of the Australian gold fields has, in the course of a short twelve months, produced a complete revolution in the feelings of the public with regard to these colonies and their affairs and fortunes. It was not enough that they possessed enormous tracts of fertile

land where, the seed being planted, magnificent crops sprang up to gladden the heart of the husbandman, almost without his care; it was not enough that immeasurable plains afforded rich pasturage for myriads of sheep and cattle which seemed to cry, from the boiling-vats in which they were being wasted by millions, for mouths to come over and eat them; it was not enough that the useful metals were found cropping out from the surface and requiring only to be gathered up; it was not enough that while in the home country squalidness and poverty were the lot of the many, and even persevering ability could not insure a sufficiency of food, and while gaols for crime and gaols for misfortune were both filled to overflowing, a teeming and beautiful land was on the other side holding out its magnificent bribes to tempt the unfortunates at home to cross the watery bridge which separated them from happiness and plenty—all appeared to be indifferent to the "voice of the charmer." Once in about twelve months an article would appear recommending a little emigration as a palliative for some portion of that misery which the legislature could not alleviate or prevent, and a ship or two would be put on now and then, lazily waiting week after week for its complement of passengers; but there was no vivid general recognition of the advantages presented by such magnificent possessions, nor any general willingness or inclination to pay the necessary "toll" over the bridge which led to them.

But a land where *gold* is to be had for the picking up, has roused alike the attention of the press and the legislature, the avarice of the capitalist, the enterprise of the merchant, and the anxious desire of all who are suffering here from lack of a sufficiency. The Gold Regions of Australia are the universal theme of contemplation and discussion. Ships for the diggings, good, bad, or indifferent, fill as fast as the brokers can engage them. Steamers of the greatest magnitude are adding their powerful and rapid assistance to the means of transit, and even "return tickets" are advertised for conveying the curious traveller to the Antipodes and back in the course of a few months' pleasant trip. Books, lectures, and panoramic exhibitions, to inform the public as to the features of the golden land, are "plentiful as blackberries." Advertisements by the page inform the emigrant where he can best procure every possible thing he may require, from a nail to a steam quartz-crushing machine, and the whole country is in a state of feverish excitement.

The actual discovery of gold in Australia, however, can scarcely be said to be a recent one. In December 1829, it is mentioned in a Sydney paper, that a piece of gold in the quartz matrix had been bought by Mr. Cohen, a silversmith, from a labouring man, whose surprise is described as great on his receiving its proper value in money. For several years afterwards, a shepherd named M'Gregor, perhaps the same individual, was in the habit of occasionally bringing pieces of gold to Sydney, by the sale of which he is said not merely to have supplied his immediate wants, but to have realized at one time a considerable property. He repeatedly offered to reveal the fortunate locality (which was supposed to lie in the Wellington district) to respectable persons, for the consideration of a large reward; but his honesty seems to have been questioned, as his conditions were never acceded to. Whether his supply had failed him or not, is doubtful, but he certainly was, at the time of the late discoveries, in gaol for debt.

The Rev. W. B. Clarke, of St. Leonard's parish, whose ability as a geologist, as well as in other departments of science, is well known and acknowledged in New South Wales, brought specimens of the metal in

1841 from the basin of the very river (the Macquarie) now supplying it, and he has also repeatedly announced his conviction that gold existed in considerable abundance in the "schists and quartzites" of the mountain chain. In consequence of communications made by him to the Geological Society, Sir Roderick Murchison, in a letter addressed to Sir Charles Lemon, advised that a person well acquainted with the washing of mineral sands be sent to Australia, speculating on the probability of auriferous alluvia being abundant, and suggested "that such would be found at the base of the western flanks of the dividing ranges."

The following passage from the *Quarterly Review* of September 1850 will show the opinion these gentlemen had formed, at that time, of the probable capabilities of the country:—

"The important point for Englishmen now to consider, is, the extent to which our own great Australian colonies are likely to become gold-bearing regions. The works of Count Strezlecki, and others, having made known the facts, that the chief or eastern ridge of that continent consists of palæozoic rocks, cut through by syenites, granites, and porphyries, and that quartzose rocks occasionally prevail in this long meridian chain, Sir Roderick Murchison announced, first to the Geographical Society and afterwards to the Geological Society of Cornwall, his belief that wherever such contrasts occurred, gold might be expected to be found; Colonel Helmersen suggested the same idea at St. Petersburg. Very shortly afterwards, not only were several specimens of gold in fragments of quartz veins found in the Blue Mountains, north of Sydney, but one of the British Chaplains, himself a good geologist, in writing more recently, thus expresses himself:—'This colony is becoming a mining country, as well as South Australia. Copper, lead, and gold, are in considerable abundance in the schists and quartzites of the Cordillera (Blue Mountains, &c.). Vast numbers of the population are going to California, but some day, I think, we shall have to recall them.'"

Mr. Montgomery Martin, in a pamphlet, published in 1847, says:—"Sir Thomas Mitchell, in his recent expedition to the north-east, found a region like the Uralian Mountains, abounding in gold. The specimens I have seen of the gold are very rich. It is in large grains, or irregular veins, loosely embedded in white quartz."

About the beginning of 1849, a very fine specimen of gold in quartz was brought to Melbourne, Port Phillip, where, in March of that year, it was shown by Mr. La Trobe, the Superintendent to Sir Charles Fitzroy, the Governor of New South Wales. This specimen was said to have been found by a shepherd in the "Pyrenees," a day or two's journey from the town, and mysterious stories were current as to his disappearance, it being supposed that he had been induced to leave the colony by some person who had bought the secret. The general feeling, however, on the subject was one of incredulity; and many who were supposed to have some knowledge of mineralogy, declared their belief that the specimen in question was an artful fabrication.

Speculations were often hazarded among persons interested in the subject, as to the probability of the colony becoming a gold-producing country, and even confident assertions made, that if washing the alluvial deposits in the streams or gullies flowing from the supposed auriferous ridges were practised, gold, in dust, would certainly be procured. Strange to say, however, so simple an experiment was never tried by those most concerned, in spite of Californian experience; and, consequently, in society generally, the

majority of persons, slow to believe in the possibility of a change so important, whenever the subject of gold-mining was mentioned, spoke of it with a sneer, as a kind of absurd speculation.

On the 2nd of May 1851, a notice appeared in the Sydney *Morning Herald* (the leading paper of the colony), intimating that it was no longer a secret that gold had been found in the earth, in several places in the western country, and that the fact was first established on the 12th of February, by Mr. E. H. Hargraves, a resident of Brisbane Water, who had returned from California a few months previously. It was added, that while in California, Mr. Hargraves felt persuaded that, from the similarity of the geological formation, there must be gold in several districts of New South Wales, and when he returned his expectations were fulfilled.

On the 8th May, Mr. Hargraves delivered a lecture in Bathurst, when he publicly announced his discoveries, stating, that after a careful examination of from two to three months, he had found that one large gold-field existed from the foot of the "Big Hill" to a considerable distance below Wellington; that the precious metal had been picked up in numberless places, and that indications of its existence were to be seen in every direction. So satisfied was he on the point, that he had established a company of nine working miners, who were then actively employed digging at a point of the Summer Hill Creek, near its junction with the Macquarie, about fifty miles from Bathurst, and thirty from Guyong, and that the name of "Ophir" had been given to the spot.

Mr. Hargraves exhibited to the people present samples of gold weighing, in all, about four ounces, the produce, he stated, of three days' work. The amount thus earned by each man he represented to be 2*l.* 4*s.* 8*d.* per day; but he observed, that from want of practical knowledge and proper implements, he was convinced that nearly one-half of the gold actually dug had been lost, owing to the labour having been performed in his absence. From the nature of some of the country explored by him, he was of opinion that gold would be found in mass, and would not be surprised if pieces of thirty or forty pounds should be discovered.

The fact of the existence of gold in the Summer Hill Creek having been thus made known to the public, digging immediately commenced. On the 10th of May, two days after Mr. Hargrave's meeting, three persons left Bathurst, and on the 12th two of them returned, bringing one piece of gold, which weighed down thirty-five sovereigns; another of about half an ounce in weight; and several small pieces, which might weigh half an ounce altogether. The largest piece was described to be of almost solid gold, about three inches long, and of varying thickness, with a small portion of quartz embedded in its thickest part, and the smallest as like spangles, but rough and uneven on the edges. On the following day two pounds and a half of gold, in lumps, besides a quantity of dust, were brought into Bathurst, which, of course, induced the formation of parties for mining, and the construction of machines, &c., for washing the soil.

On the 16th of May the arrival in Sydney of the specimens mentioned above caused a great sensation; and on the 17th the report of Mr. Stutchbury, the Government geologist, reached the Government. This report was so conclusive as to the existence of gold in large quantities that a proclamation, which had been prepared for some time, was immediately issued, declaring the right of the Crown in all precious metals, and prohibiting all persons from searching for, or carrying off, the same, except under regulations which were shortly to be promulgated. These, which

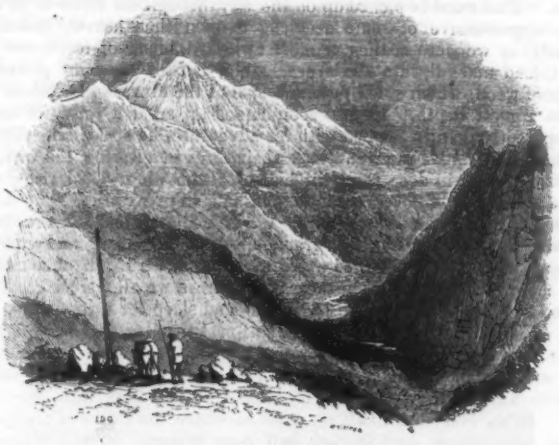
were framed in some degree on the Californian model, were published a day or two afterwards, and insisted principally on a charge, or licence-fee, of thirty shillings—which was to be paid by every individual applying for permission to search for the precious metals—for every calendar month, or part of a month, to a land commissioner, appointed to receive it, who was also to have power of allotting small portions of Crown land to each worker, and of settling disputes as to conflicting claims, &c. On private lands no persons but the proprietors, or such as they might authorize, were to be allowed to work, but all were to provide themselves with licences.

SUMMER HILL CREEK.

The excitement in Sydney was kept up by occasional accounts of great success on the part of individuals. On the 24th of May very favourable intelligence was received from the gold-diggers, many of whom wrote to their friends that they were making 3*l.* or 4*l.* a-day. One party of four was said to have taken out thirty ounces in one day, and a piece of ore pound weight had been found. A letter, said to be from a person of undoubted veracity, stated that one man had, within three weeks, accumulated 1,600*l.* worth of gold! It was also stated that, whatever might be the desponding accounts of some disappointed adventurers, the fact was certain, that a large quantity of gold was lying in the bank at Bathurst, waiting a safe conveyance to Sydney, and that the whole of Mr. Wentworth's property near Bathurst (Fitzgerald's Valley) was found to be one large gold-field.

CEREMONIES are in themselves very silly things, yet a man of the world should know them. They are the outworks of manners and decency, which would be too often broken in upon, if it were not for that defence, which keeps the enemy at a proper distance.—CHESTERFIELD.

ASCENT OF MONT BLANC.



MONT BLANC.

A SHORT account of the latest ascent of Mont Blanc* may be interesting to some of our readers:—

When I arrived at Lucerne I had little notion of making the attempt; but here I heard such glowing accounts of the scenery from the summit that I determined to undertake an expedition to the top, full of the idea that if I could reach it in tolerably good condition, I might, being something of a draftsman, make sketches enough to give some idea of the nature of the view, which, from such an elevation, could have no parallel in Europe. I fully tested my powers of endurance in a walk from Lucerne to this village, including some of the finest scenery, and, also, the hardest walking, in Switzerland. I remained at Chamounix for some days, looking out for propitious weather. It is necessary to wait at least two days of fine weather before setting out, to allow the snow to condense and afford firm footing. While at Chamounix I found an Englishman, who declared himself able and willing to share the fatigue and excitement of the undertaking. Accordingly, Mr. Alfred Goodall, of the Engineers, and myself, set forth from Chamounix at half-past seven last Monday morning. The chief guide (elected every season by the company of guides) selects the proper guides for the expedition. Each traveller is compelled to take at least four guides, and as many more as he chooses. The pay of each guide is 100f., and the traveller furnishes all provisions. At eleven the whole cavalcade had reached the Pierre de l'Echelle, or land's end of the mountain, and here, on the top of a huge stone, the caravan set to feasting, in all, a party of nineteen, for each guide has his porter and we had a volunteer guide besides. The subject of conversation now became how far the porters were to accompany the guides over the ice; this point and the meal having been settled, we struck out on the Glacier de Bosson, and having marched through pretty deep snow, the porters, in about an hour, turned back, and the guides took the whole of the burdens, consisting of

* Extracted from a letter addressed to *The Times*.

the remainder of our provisions and some wood for our fire on the Grands Mulets. This wood is picked up on the way through the forest of fir trees. I was apprehensive of some accident to men thus heavily laden, and presently, as we were scaling a most awkward block of ice, down went Favret, load and all, into the crevasse, and but for his long protruding faggots of wood, which stuck on either side of the crevasse, he would have gone to a great depth. He was soon hauled up amid a volley of *sacres*, and apparently greatly pleased with his adventure, he strode on. Devouassond, Cachat, and Frasserand took their turns in clearing the way, and after floundering in deep snow till half-past four we reached the Grands Mulets, consisting of several chaotic pyramids of great size. The ladder we left sticking in the snow below. We immediately set to work drying ourselves and dressing for the grand effort of the night and morrow. Having sent out three guides to explore the track, we began once more to attack the provisions, and when the party returned we all were exceedingly pleasant together, and managed to turn to and sleep for three hours. At eleven we swallowed some tea, and at half-past two lanterns were lighted, and the snow being pretty well frozen during the night we walked more easily, and all tied together about five feet apart, we followed the leader, who, with knitted brow and mighty strides, struck forth into the white gloom. In an hour and a half we came to where the traces of the reconnoitring party ceased, and another half hour brought us to a region of terrible crevasses. We were brought to a halt, and the usual passage was declared impracticable; exploring parties were again detached, and we stood watching Devouassond, Cachat, and Frasserand, as they skirted along the edge of the crevasse to the left, thrusting their staffs into the hollow, and peering on every side with the lantern. They returned without success. (On our return in daylight we saw what a terrible place we were attempting.) Devouassond began to fear that no passage existed; but I told him that to go back was impossible, and so we lay to once more, waiting for the sun to dispel the great darkness. At half-past three Devouassond went away to the right with Frasserand and Mr. Goodall, and the increasing light showed us a narrow bridge at the foot of the Dome de Gouté. We joyfully crept along this slender bridge of ice, and reached the other side. While we waited for the sun the scenes were of ghastly grandeur. Leagues above us the summit and the Dome de Gouté were tipped with the moon, and stood out like comets in the black sky, while behind, on tbe opposite side of the valley of Chamounix, namely, on the range of Brevent, the whole of Mont Blanc's shadow in the moonlight was reflected. No pictorial effort could convey the solemn majesty of this scene. When the sun began to rise in deep red over the wall of mountains the scene was still more grand; the precipitous cliffs of the Géant, bearing up the fortresses of ice, cut the golden sky with their black edges; and while on one side scarcely any light appeared in the sky, the other was in hard relief against its brilliancy. The Dome de Gouté, now opposite the sun, was a mass of gorgeous violet colour, which being reflected on the prominences of emerald green ice on the plain before us, gave a variety and peculiarity that if correctly described would sound like a magic illusion—it seemed like walking on a huge prism; and I think that if I had been able to sleep a wink the night before leaving Chamounix, I could not have resisted the temptation of trying to make some representation of the scene on my roll of paper. The snow was still hard, and we walked on over the Petit Plateau in silence, and winding up a

steep ascent came to the Grand Plateau—a vast plain of a semicircular form, the circular side being surrounded by cliffs of ice and snow. The Grand Plateau seemed to me about the length of Eaton-square, but broader. We were there at half-past five, and came to a halt, and pulled out six fowls and three bottles of wine, which was all we took from the Grands Mulets; and after giving vent to our exultation, hitherto suppressed, we set to once more on the eternal fowls and wine. I confess that here I felt a horrible nausea, worse than sea-sickness. As exertion must be maintained I could not eat, though Mr. Goodall declared he could not do otherwise. We all, however, enjoyed the wine, and then joined the brave men of the Mountain in the most noisy, if not quite harmonious, of Marseillaises; threw an empty bottle at a ruined avalanche, and with yellow faces, but cheerful minds, crossed this great expanse of ice, and were told to hurry over the ditch that separated the wall before

St. Bernard.

us, and which we were about to climb. Simon now took the long poleaxe, with a hatchet on one side and a bent spike on the other, and began smashing the ice quickly and cleverly. Though but a flimsy staircase, we went all the faster, being as good on our feet as any of the guides. This was a hard pull; and, after some hard work in the ravines, we came out on La Valée, the largest field we had seen, wider than the length of the Plateau, and stretching in an inclination above us like the horizon of the ocean. We were now to look out for the mountains of the opposite side of Mont Blanc—namely, the Great St. Bernard and the Bernese Alps; they were long in appearing; at last, like land at sea, they showed above this wearisome Vallée. To the left of our line was the Géant and the Mont Maudit, which formed one horn, while the terrible Mur de la Côte formed the other horn, to the right of the crescent, in which we stood, as regards our right and left, though it formed a dome as regards our line of march.

Here the air was very scanty, and the nodding endemic became very strong; superfluous clothing was now thrown aside, and we began to climb

the Côte in a straight line over its centre, on an angle of forty degrees at the least. The Côte was mostly snow, and we at last crawled to its summit, when behold before us the last and highest dome of the mountain appeared. I looked nowhere, except at the way I was to go, and went over the last valley behind old Tournier, who was first. I cast myself loose from the rest, and with our last strength we attacked our last difficulty. This dome, indeed, looked like Mont Blanc in itself, but its

VIEW FROM THE RHIGI.

symmetrical form—a perfect pyramid, I should think about as high as St. Paul's—was assurance that here was the Monarch's Crown indeed. A small rock protruded from the middle of the ascent, and thither I told Tournier to cut the steps. The inclination was steep, but here the footing was of the firmest and clearest ice. Another half-hour we were told would bring us to the top. I tightened my rope, and told Tournier he should have five francs to let me pull myself after him. I did so for a few minutes, while he hewed the steps in the ice, which sometimes came out in one block, and went rattling down the dome with a noise like a loose tile from the top of a house roof. I and Tournier were some yards before the others, when Frasserand, seeing the desperate work of Tournier, wanted to go before and take his turn at the axe, but Tournier said doggedly, "*C'est impossible*," and on we went. At length we lay down on the ice, declaring we would sleep ten minutes; but Tournier would not listen to this. He said, "Three minutes more, and we are on the summit." I got up, and am glad to recollect that I pulled old Tournier after me this time, and, sure enough, the top was reached. I was astonished at the rate at which Mr. Goodall and Frasserand came after us. Throughout the ascent we neither of us required the slightest help, except where we crossed over obstructions, and when the awful words, "*Place! Place!*" were given we were on foot in a moment; for on the Vallée and the Côte we were obliged to drop down occasionally, and felt wofully inclined to sleep

Mr. Goodall called for fowl on reaching the summit, and did not appear to suffer throughout the whole ascent. I had felt nothing since the Grand Plateau, and now I began to look abroad.

The summit extends about seventy yards, running east and west, the west end being some five yards higher than the east. The width is about twenty or thirty yards, and the surface was of heavy snow, ankle deep. The reflection made the heat intense, while on the last ascent the wind was bitterly cold as it came round the icy dome.

We reached the summit at eleven o'clock, and a flag was erected. All Chamounix was in a state of triumph, and it is said that cannons were going off. After a general survey I sat down, and we pulled out the champagne and swallowed it, saying something about the Queen.

I turned to my roll of paper, and made Devouassond hold it up. I looked at the paper, then at the astonishing landscape. Fearful to lose time in drawing, I took a few of the prominent lines where the view was clear of clouds, but we were obliged to commence our descent in two hours for fear of being benighted.

I was as strongly impressed with the view as if I had been looking at it for the whole day. The Bernese Oberland appeared like a mass of mountains packed in clouds; their peaks rose from the clouds, which seemed to fill the villages. Monte Rosa and the Wetter Horn appeared beyond, and on that side no real horizon appeared. To the south the Genoese mountains, and over them a long, purple mist, whether the Mediterranean or not, was uncertain. Towards Lyons the clouds were low, and nothing was seen but the line of Jura stretched far, and beyond it the Côte d'Or. Not a vapour obstructed the glare of the sun above us. We were looking as it were at many contemporaneous days. Our own day was fine; that at Lyons appeared otherwise, as also those in the valleys of the Oberland. Beyond Mount Jura the horizon appeared like a sea of faint blue. The Lake of Geneva was distinctly seen by some, but I did not distinguish it. So extraordinary a scene exceeded my expectations, and the time we were on the summit seemed but a few minutes. I took another sketch at the foot of the Côte, and another at our next resting-place, and one the previous evening at the Grande Mulets—in all four; and with them I hope to convey some idea of the wonderful view, to recall to my mind a scene which is rarely enjoyed twice. We commenced our descent at one, and reached Chamounix at twelve Tuesday night, having walked within the time we left about thirty-five leagues.

I remain, Sir, your very obedient servant,

Chamounix, July 7, 1852. J. D. H. Browne.

OUT OF ONE'S TIME.—No. II.

"Mitchell married almost directly, from, as he told me, economical motives. 'A wife,' said he, 'is indispensable to a man situated as I am. I may have a very good housekeeper, but her interest and mine are not one; she may conduct herself with much propriety, but she can never have the influence over others or over myself that a wife would; she may make me very comfortable, but she will never make me happy; make toil sweet by sharing my labours, or quicken my exertions by new objects to engage them; respect for myself may keep me correct in my conduct towards her, but she will be no guide or stay to me in the path most essential of all others—the path that leads to a higher and a better world than this, nor I to her.'"

"He spoke like a man of sense," said Walter, availing himself of the pause made by Mr. Mathews. "That's exactly what I—" he checked the words he was going to utter.

"Just as you would have said," cried Tom. "I believe it: but let's hear whether he was as wise in his conduct as in his words."

"The wife he chose," continued Mr. Mathews, "was every way worthy of him, and was as assiduous, as civil, and as prudent as himself. The business to begin with was not large, but it was very fair, and gave promise of becoming more extensive. Pleasure might invite them, friends might sue for their company, neither he nor his wife were to be found absent from home, at least together. Every year witnessed the birth of a child, and though I knew by the larger amount of the orders I received that things were going on in a prosperous way, the only difference I perceived in their way of living or general appearance was a table plainer if possible than before, though more substantial, and a still more simple and inexpensive style of dress in the wife. There was not a house that I better liked to be invited to than theirs. All was cheerful, well-conducted, and quiet. The children were tractable, the apprentices, for he had soon two, were respectful, and the servant that I was in the habit of seeing—she might be the only one they kept for what I knew—in dress and manner corresponded with her master and mistress."

"I suppose she wore no flowers in her bonnet then," said Tom, "nor her ringlets, nor—"

"I never saw her in her bonnet," replied Mr. Mathews, "that I am aware of, but I make no doubt that she wore neither; and very properly, for neither flowers, nor ringlets, nor any marked style of dressing the hair, becomes a servant."

"Now that's being too particular," said a young man near him, "I could say, it is illiberal; servant girls like to appear smart, as well as their superiors, and may, for what I see, full as innocently."

"That they may like it, I will not dispute," returned Mr. Mathews, "but that they may gratify their liking as innocently, or even innocently at all, I very much question; a desire to appear smart, which is a love of dress, is dangerous in any female, let her rank be what it may, but especially to one in an inferior station."

"But where's the harm of it?" asked the other.

"Consider its motive, look to the end," rejoined Mr. Mathews; "a wish to attract notice, which aim attained, is too often the seal of her destruction. The vanity that gives birth to the desire is itself fed by every gratification of its offspring, till integrity, principle, and womanly modesty are lost. Let a female be clean, and neat, and becomingly dressed, and she is to be commended; if she goes beyond this, she does it at the hazard of all that ought to be dear to her, or respected by us."

"Order, order," said Tom, "no deviation from the story."

Mr. Mathews resumed. "So well arranged was everything in Mitchell's family that, as I was saying, it was always a pleasure to me to be admitted into it. If I was fatigued, their cheerfulness refreshed me; if I felt a little out of sorts, or oppressed in spirits, their quiet, solid happiness at once calmed and enlivened me; and I never left them without an increased feeling of good-will to my fellow-beings generally, and of conscious good-humour with myself. Certain of an invitation, I always made my arrangements so that I might accept it; go when I might, I never found him from his post. If change of scene had been really necessary to health, Mitchell might have

been the most sickly man in the world, for a journey to London twice a year on business was about the only variety his monotonous life could boast of, and, as he told me, he had as little inclination as leisure for any other."

Mr. Mathews made a pause.

"We are come to the end of the first part of the tune, I suppose," said Tom. "We will fill up our glasses, gentlemen, if you please, and so prepare for the second."

This was done, the candles were snuffed, silence was restored, Mr. Mathews cleared his voice and began:—

"In the meantime, Atkinson had pursued a very different course. His business was very flourishing, and he himself was clever and obliging; he was well spoken of and esteemed throughout his neighbourhood. He married a young and amiable person, with a very nice fortune, and thus he had plenty of money at command. It was about this time that the railway mania was attaining its height. Atkinson speculated to some amount, but with considerable judgment, and he was very fortunate; again and again he ventured his luck, and succeeded at each trial—hundreds became thousands, and he was a rich man. Business was of course relinquished. He bought an estate, in another county, built a house upon it, and commenced gentleman. I had lost sight of him altogether for some time, when accident brought me into his way, a few days since. He had been on a visit to Mitchell, whom, he informed me, he had not before seen from the time he himself had left that part of the country He was so urgent that I should return with him, that finding I could so arrange it, as not to cause me much delay, I accompanied him to his home.

"I expected to see a pretty place, but it far exceeded the idea I had formed of it. Every comfort, every luxury I might say, were his; wife, children, house, grounds, all were lovely. 'If ever a man is to be envied,' thought I, 'Atkinson is the man.'

"In the evening we took a stroll together. I was full of admiration of all I saw, and expressed my feelings in corresponding terms. He listened to me, as at length I perceived, the more gravely as I became the more animated; I had now exhausted myself, and stood silently looking at the beautiful prospect before me.

"Atkinson now spoke, 'You say I am to be envied,' exclaimed he, 'I know another man who is much more to be envied than myself.'

"'Indeed,' cried I, in a tone of surprise and doubt, 'I should hardly think that possible.'

"'It is nevertheless true,' replied he.

"'Why, what can you have to desire that you have not?' asked I, 'what have you to do but to enjoy the blessings that surround you?'

"'If I had more, or anything to do, less to enjoy,' replied he, 'I should be more truly an object of envy, I should be in reality happier. I have nothing to employ me, nothing to call forth my activity and energy, nothing to wish for, nothing particularly to interest me. I get up in the morning, I go to bed at night, full, every way full of this world's goods. Look where I may, ramble where I choose, everything is beautiful, perfect, and all is my own. If I have a desire to gratify, I have no one's leave to ask. I go where I like, do as I like, my movements are controlled by no will but my own, and yet—' he checked himself.

"'You don't mean to infer that you are not happy?' exclaimed I.

"'My visit to Mitchell,' replied he, 'has shown me what is wanting to

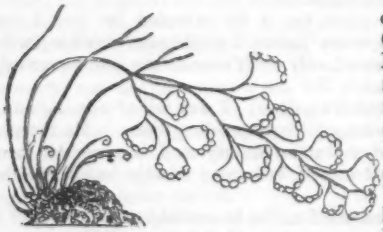
make me happy, and has opened my eyes to the truth. Every moment of his life is usefully employed, and employed as an honourable means to a legitimate end—the well-being of his family, and ease in the decline of life. The restraint that his position in society imposes on him, acts not as a chain to a slave, but as a curb to the impatient courser, not galling, but regulating his ardour and his inclinations; not degrading, but improving both the moral and the social condition of the man. There is a future before his eyes which operates upon him as did the pillar of fire to the Israelites in the wildnerness—a light to guide him. He enjoys in reality the enjoyment to which he looks forward, and is the man, every day of his existence, that he labours and hopes to be before his career closes.'"

THE FERN TRIBE.—No. II.

In our former paper we spoke of Ferns as being classed under two heads; the annulatæ, those in which the thecæ are provided with a marginal ring, which operates in the dispersion of the seed, and the exannulatæ, which have no such appendage.

This first class is divided into six families; the second contains but three. Our simplest and best plan will be to follow the order in which Newman, who will act as our chief authority, places them, and examine what are the distinctive differences in structure which mark these various families.

The first in order is the Adiantaceæ, which family contains many exotic, but only three British genera; these are named Adiantum, Lomaria, and Pteris. In these islands we have but one species of each of these genera.



True Maiden Hair.

The rarest and most elegant of our British Ferns, Adiantum Capillus-Veneris, or the True Maiden Hair, is of the first-named genus. It is found rather abundantly in the isles of Arran and in some part of Ireland, as also in Glamorganshire, and some other places in Wales. In Scotland it is unknown, and in England the localities where it is found are but few, and those entirely confined to Devon and Cornwall. Near Ilfracombe is its chief Devonshire haunt, although a few plants of it have been found near Brixham, and in other parts of South Devon.

The distinguishing feature of this family, the Adiantaceæ, is that the thecæ, or seed-cases, are covered by a portion of the frond, or of its upper skin; sometimes this appears like the inclusium, or membrane which ordinarily covers the thecæ, at others it is evidently a portion of the frond itself. In the first genera (the Adiantum) of the family of which we are now speaking, the masses of thecæ are borne in circular masses on a reflexed portion of the edge of the frond; and in this specie (Adiantum Capillus-Veneris) they appear like oblong bodies arising from the edge of the leaf. This lovely Fern is always found on moist caves or rocks, near the sea-coast, where it roots firmly into the crevices of the stone, preserving a perpendicular situation. Its roots are wiry, black, and fibrous; the rhizoma is black and scaly. The young leaves appear in May, and are

matured in July. The rachis is naked, shining, and dark, the branches or pinnæ alternate, the leaflets fan-shaped, and each on a distinct stalk. Its veining is very beautiful. The foot-stalk, which is of a rich crimson-brown, divides at the base of the leaflet, and forms a ridge from whence branch off strong but very delicate veins of a whitish green; these veins again subdivide, and fork off into pairs at about the middle of the leaflet, and each vein so formed forks a second time before it reaches the margin of the pinnæ, where the masses of thecæ lie, and ornament the leaf with a sort of braided border of exquisite beauty. Though loving moisture, the leaves are always dry, from which circumstance the generic name is derived from a Greek word signifying "dry." "In vain," says Pliny, "you place the Adiantum into water, it always remains dry." The leaves of the True Maiden Hair are considered pectoral and lenitive, and in former days were much valued in medicine; they contain a thick astringent mucilage, and from them (though other kinds are occasionally substituted for them) is prepared the beverage called capillaine, a term derived from the specific name of the plant. Gerard tells us that Dioscorides, ascribing many virtues to it, addeth, "It is sown about sheepfolds for the benefit of the sheep, but what that benefit should be he showeth not; besides that it cannot be sown, it being without seeds, it is evident." It is an old notion of writers of his day that Ferns produced no seed, though Gerard himself seems to have had

HARD FERN.

a strong suspicion that some kinds of Ferns did. This idea of the seed of the Fern being invisible was carried out into the idea that if any such thing

could be procured it would render him who wore it also invisible. Shakspeare makes one of his characters in Henry IV. say, "We have the recipe of fern-seed, we walk invisible;" and Ben Jonson, another old writer, says—"I had no medicine, sir, to go invisible, no fern-seed in my pocket." We have, however, seen that the Fern *does* bear seed in immense quantities, and that the Almighty Creator has amply provided it with means for dispersing the seed as well as of preserving it from injury during its progress to maturity.

We now come to the genus Lomaria, of which Lomaria spicant, called by some authors Blechnum boreale, and in common parlance the "Northern Hard Fern," is the only British species. This is generally distributed throughout these islands, though it is rather arbitrary in choice of situations, preferring moist boggy ground; so that, although in some localities it grows profusely on every bank and wood, in others not a frond can be seen for twenty miles together. The mark which distinguishes Lomaria is that the thecæ are continuous, placed in lines on the pinnæ, which they nearly cover, and are covered with a continuous inclusium.

The roots of L. spicant are black, tough, and wiry; its rhizoma tufted and hairy. The fronds first appear in May, reach maturity in August and September, and continue perfectly green and vigorous through the winter. The fertile frond is linear, simply pinnatified, and pointed at the apex; the pinnæ are narrow and linear, and rounded at the apex. The lower half of the rachis is dark purple, shining and naked; the under side of the frond is nearly covered with the masses of dark-brown thecæ, which form a continuous black line on each side of the mid-vein. The barren fronds, which grow on the same root, are less erect, shorter and broader, and the pinnæ closer together. The singular and very beautiful appearance which this Fern presents, from the mixture of leaves so dissimilar on the same plant, and from the grace and vigour with which its noble tufts of vivid green rise from the earth, and cluster in groups among the other Ferns and flowers which adorn the mossy banks and braes in wild districts, attracts much notice and admiration. It grows in great luxuriance in the woods of Holne Chase, on the beautiful banks of the river Dart, which runs through the wilds of Dartmoor, where may be found a greater variety of Ferns than grow in any other part of the southern counties of England. This Northern Hard Fern is, however, not excelled in beauty by any; for though the Osmunda regalis may tower grandly above it, and the Shield Ferns spread their broad fronds in unrivalled dignity, yet the grace of the Hard Fern, and the peculiar appearance which its narrow comb-like fronds present, always attracts the eye of the admirer of nature, and compels his attention whatever other beautiful objects may be near it. The third genus of the family Adiantaceæ is the Pteris, of which the Brachen (Pteris aquilina) is our own British species. Although there are ninety-four exotics of this genus, this is the commonest of our Ferns, and is found everywhere; but it is one of those truly wild plants that flies before cultivation. Though inveterately pursued and rooted out by the husbandman, it is of great value to the sportsman, as favouring a fine covert for game. Its average height is from two to three feet, though in moist shady woods it grows to double that size. The mark of this group of Ferns is that the thecæ form a continuous marginal line, covered by a continuous marginal inclusium. The roots of P. aquilina are brown and fibrous; the rhizoma brown, velvety, and rapidly creeping, and where they grow long together unmolested they penetrate the ground to an immense depth, and fill the soil with a perfect network of rhizomata. The young fronds, which

are very tender, and often cut off by early frosts, come up not like those of most other Ferns, in a circinate form, but bent or doubled back, the leafy part being pressed against the rachis. The part of the rachis which

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lies below ground is thicker than that above, and when it is cut through, in either a direct or oblique direction, the bundles of vessels which run through it present a very singular appearance, exhibiting the form of an oak tree, whence it is called "King Charles in the Oak." Linnæus thought this appearance more like that of a spread eagle, for which reason the specific name Aquilina. The generic name Pteris is given from its plume-like growth, and was that by which the Greeks called Ferns in general. Although the Brachen is so common, I question whether one in ten of my readers has ever examined the back of one of its fronds in the autumn, when its fruit is formed. Whoever has not, let me advise him to go to the nearest copse or hill side, and gather a leaf for that purpose; and having done so, carefully to notice its appearance. He will find that the form of the frond is nearly the shape of an equilateral triangle; the naked part of the rachis being rather more than a third of the entire length of the frond: the pinnæ are what is called pinnate, that is, divided into branches, and these pinnatæ are regularly cleft to their midrib, and thus divided into lobes. It is not uncommon to find fronds in which the lobes of the pinnatæ at the upper part of the frond present a straight edge, whilst those lower on the stem are notched very regularly like the teeth of a saw. I have one of this description now before me, and will take it as my example. Around every part of each lobe runs a delicate border of a velvety appearance, and light-brown hue. It follows the margin of the

leaf most exactly, and is in due proportion to the size of the green leaflet on which it reposes, and consequently rather narrower on the upper than on the lower branches. The lowest pair of pinnatæ, and the pair next above it, are deeply notched; and as the border still continues to follow each part of the edge, it here necessarily assumes the form of a Vandyke. This beautiful border consists entirely of myriads of thecæ or seed vessels, which, if examined under a microscope, are seen to be little globular cases of a crisp and shining material, in each of which is contained a countless multitude of minute grains like a brown powder. These are the organs of reproduction. Lindley well describes this edge as it appears before the fruit discloses itself to view:—"Look attentively at the under side of the leaves; you will remark the margin to be turned in and thickened like the hem of a lady's gown, in which a cord is run; there lurk the thecæ you are in search of. With the point of a knife lift up gently the edge of the leaf, and you will at once discover a ridge of thecæ running all round it. In this instance the margin of the leaf acts the part of the inclusium." This is not only the most abundant but the most useful of our Ferns. It is valuable for thatching, and for litter for horses, packing fruit, &c.; it has also medicinal qualities, and contains so much alkali that its ashes are used in making soap and glass. It has also astringent properties, which render it serviceable in preparing kid or chamois leather. Its harsh texture and astringent taste render it unpalatable to cattle, though the roots are sought by pigs, and have even been ground down and made into bread. Francis tells us that the peasants in most parts of the kingdom use it for fuel, and claim a right to cut it for that and other purposes; but that in Germany it is considered so important to the farmer as fodder for cattle, that it is an article of ready sale there, and the cutting of it restricted by very severe forest laws.

Now let us just look back for a moment, and we shall surely be struck with admiration, not only at the skill of the "Great Workmaster," as exhibited in the graceful forms and vivid tints which he has bestowed on these denizens of the rocks and hills, and the microscopic beauties and wonders which are discoverable in their delicate veining and minute organs of reproduction, but also of His loving kindness in connecting so much that is useful to man, with so much of beauty. Of the three species of Fern which we have been considering, we find two—the Maiden Hair and the Brachen—to be possessed of medical properties, and the former used to make a delicate beverage. The latter, which is so abundant and general in its growth, is of use for household and agricultural purposes, for tanning, for making glass and soap, and even in times of emergency for the food of man. Let us not then turn aside from the contemplation of any of God's works with a doubt whether they are worth studying, for we may be sure that—

"One Spirit—His
Who wore the plaited thorns with bleeding brow—
Rules universal nature. Not a flower
But shows some touch in freckle, streak, or stain,
Of his unrivalled pencil. . . . .
Happy who walks with Him, who, what he finds
Of flavour or of scent in fruit or flower,
Or what he views of beautiful or grand
In nature, from the broad majestic oak
To the green blade that twinkles in the sun,
Prompts with remembrance of a present God."